REMARKS/ARGUMENTS

Claims 1-30 are pending in the present application.

This Amendment is in response to the Final Office Action mailed October 26, 2006. In the Final Office Action, the Examiner rejected claims 1-3, 7-11, and 15 under 35 U.S.C. §102(e); and claims 4-5, 12-13, 16-20, 22-28, and 30 under 35 U.S.C. §103(a). In addition, the Examiner indicated allowable subject matter for claims 6, 14, 21, and 29 if they are rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have amended claims 1, 5, 13, 16, 20, and 28. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Responses to the Examiner's arguments

1. In the Final Office Action, the Examiner contends that since Goronzy discloses a confidence measure that identifies probabilistically incorrect recognized utterances, marks incorrect portions with a confidence score that can be assigned on an utterance, word, or phoneme basis, and grades an incorrect utterance with a strength of adaptation weight for performing speaker model adaptation, Goronzy anticipates the invention recited in clam 1 (Final Office Action, pages 2-3, paragraph number 3). Applicants respectfully disagree for the following reasons.

First, Goronzy teaches an unsupervised adaptation method (Goronzy, col. 3, lines 6-8). As the Examiner may be aware, an unsupervised method does not have a reference string. The unsupervised method typically requires no action from the user (Goronzy, col. 4, lines 57-58). Goronzy specifically discloses that no supervising user of fixed set of vocabulary for adaptation is necessary (Goronzy, col. 3, lines 19-20). Accordingly, Goronzy does not disclose or suggest "identified errors in recognition of utterances" as recited in claims 1 and 16, or "to form adaptation enrollment data" as recited in claims 8 and 23. In contrast, the claimed invention uses a reference string. To clarify this aspect of the invention, claims 1 and 16 have been amended.

Second, Goronzy discloses making a decision based on whether a phoneme/word/phrase is correctly or incorrectly classified. The decision is a certain probability for the correctness of a received utterance (Goronzy, col. 3, lines 66-67; col. 4, lines 1-3). Goronzy merely discloses calculating a confidence measure using extracted features including scores of the n-best

recognition hypotheses, HMM state durations, etc. In contrast, the claimed invention calculates the estimated weights for identified errors based on a reference string, not on certain probability.

2. In the Final Office Action, the Examiner further contends that although the claims are interpreted in light of the specification, limitations from the specifications are not read into the claims, citing In re Van Guens, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993) (Final Office Action, page 3, lines 9-14). Applicants respectfully disagree and submit that the Examiner misreads Van Guens.

In Van Guens, the claim in question recites a magnet assembly with a "uniform magnetic field". The board found that the Japanese reference disclosed a magnetic assembly with a substantially uniform magnetic field, varying no more than 10 percent. Van Guens does not disagree with this finding. Instead, Van Guens argues that the uniform magnetic field limitation in the claim in question must be interpreted in light of the specification and the understanding of persons skilled in the NMR and MRI art. Van Guens then contends that the Japanese reference does not make the invention of the claim in question obvious because it does not teach the level of magnetic field uniformity required for NMR imaging. The court rejects this argument and states that the claim is not expressly limited to NMR or MRI apparatus. The court then holds that Van Guens cannot read an NMR limitation into the claim to justify his argument as to the meaning of the "uniform magnetic field." The Van Guens court, therefore, applies the rule that limitations from the specification are not read into the claims only when there is no dispute that the prior art discloses the claimed invention and the limitation provides further specificity to the claim in an attempt to distinguish from the prior art. In the present application, no limitation from the specification is read into the claim. The specification is used only to interpret the claim language to distinguish from the prior art. Accordingly, Applicants submit that neither Goronzy nor Junqua discloses, either implicitly or explicitly, suggests, or renders obvious the claimed invention.

3. In the Final Office Action, the Examiner contends that Junqua teaches a means for calculating a total likelihood (average) per incorrectly recognized (error, i.e., difference) utterance (frame) and averaging all of the error likelihoods in determining a confidence measure, citing (Junqua, col. 5, lines 15-67) (Final Office Action, page 3, last paragraph). Applicants respectfully disagree for the following reasons.

As presented in the previous response, Junqua merely discloses the likelihood of observation given HMM model (Junqua, col. 5, lines 43-44), not an average likelihood difference per frame, or averaging the average likelihood difference over error words. Junqua merely discloses a likelihood score ratio that compares the likelihood score associated with the mean or average of the likelihood scores associated with the incorrect recognition (Junqua, col. 4, lines 18-21). The likelihood ratio is the ratio between the likelihood score for correct recognition and the likelihood score for incorrect recognition (Junqua, col. 5, lines 26-30).. In contrast, claim 4 recites the average likelihood difference (not ratio) per frame. Furthermore, neither Goronzy nor Junqua discloses or suggests computing a weight value by averaging the average likelihood difference over error words.

4. In the Final Office Action, the Examiner contends that applicants' arguments failed to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically point out how the language of the claims patentably distinguishes them from the references (Final Office Action, page 4, lines 3-6). Applicants respectfully disagree. Applicants have specifically pointed out, *inter alias*, that the phrases "based on a reference string" (as recited in amended claims 1 and 16, and claims 8 and 23), "identified errors in recognition of utterances" (as recited in claims 1 and 16), "to form adaptation enrollment data" (as recited in claims 8 and 23), "computing the average likelihood difference per frame" (as recited in claims 4, 12, 19, and 27), and "computing a weight value by averaging the average likelihood difference over error words", clearly distinguish the claimed invention from the cited prior art references.

Rejection Under 35 U.S.C. § 102

In the Final Office Action, the Examiner rejected claims 1-3, 7-11, and 15 under 35 U.S.C. §102(c) as being anticipated by U.S. Patent No. 6,799,162 issued to Goronzy et al. ("Goronzy"). Applicant respectfully traverses the rejection and submits that the Examiner has not met the burden of establishing a prima facie case of anticipation.

Goronzy discloses a semi-supervised speaker adaptation. A confidence measure is applied to a recognition result (Goronzy, col. 3, lines 50-51). The confidence measure can be

used to compute a weight which determines the strength of adaptation (Goronzy, col. 4, lines 31-33).

Goronzy does not disclose, either expressly or inherently, (1) calculating estimated weights for identified errors in recognition of utterances based on a reference string; (2) marking sections of the utterances as being misrecognized and associating the estimated weights with the sections of the utterances; and (3) using the weighted sections of the utterances to convert a speaker independent model to a speaker dependent model.

First, Goronzy teaches an unsupervised adaptation method (Goronzy, col. 3, lines 6-8). As the Examiner may be aware, an unsupervised method does not have a reference string. The unsupervised method typically requires no action from the user (Goronzy, col. 4, lines 57-58). Goronzy specifically discloses that no supervising user of fixed set of vocabulary for adaptation is necessary (Goronzy, col. 3, lines 19-20). Accordingly, Goronzy does not disclose or suggest "identified errors in recognition of utterances based on a reference string" as recited in amended claims 1 and 16, "comparing the recognized string with a reference string to determine errors" as recited in claims 8 and 23, or "to form adaptation enrollment data" as recited in claims 8 and 23. In contrast, the claimed invention uses a reference string. To clarify this aspect of the invention, claims 1 and 16 have been amended.

Second, Goronzy discloses making a decision based on whether a phoneme/word/phrase is correctly or incorrectly classified. The decision is a certain probability for the correctness of a received utterance (Goronzy, col. 3, lines 66-67; col. 4, lines 1-3). Goronzy merely discloses calculating a confidence measure using extracted features including scores of the n-best recognition hypotheses, HMM state durations, etc. In contrast, the claimed invention calculates the estimated weights for identified errors based on a reference string, not on certain probability.

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Vergegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). Since the Examiner failed to

show that Goronzy teaches or discloses any one of the above elements, the rejection under 35 U.S.C. §102 is improper.

Therefore, Applicants believe that independent claims 1, 8, 16, and 23, and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicants respectfully request the rejection under 35 U.S.C. §102(e) be withdrawn.

Rejection Under 35 U.S.C. § 103

In the Final Office Action, the Examiner rejected claims 4-5, 12-13, 16-20, 22-28, and 30 under 35 U.S.C. §103(a) as being unpatentable over Goronzy in view of U.S. Patent No. 6,253,181 issued to Junqua ("Junqua"). Applicants respectfully traverse the rejection and submit that the Examiner has not met the burden of establishing a prima facie case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP §2143, p. 2100-129 (8th Ed., Rev. 2, May 2004).* Applicants respectfully contend that there is no suggestion or motivation to combine their teachings, and thus no *prima facie* case of obviousness has been established.

Goronzy discloses a semi-supervised speaker adaptation as discussed above.

Junqua discloses a speech recognition and teaching apparatus able to rapidly adapt to difficult speech of children and foreign speakers. A likelihood score ratio compares the likelihood score associated with correct recognition with the mean or average of the likelihood scores associated with incorrect recognition (Junqua, col. 4, lines 18-24). The ratio uses the Hidden Markov Model (HMM) (Junqua, col. 5, lines 35-45).

Goronzy and Junqua, taken alone or in any combination, do not disclose, suggest, or render obvious (1) calculating estimated weights for identified errors in recognition of utterances; (2) marking sections of the utterances as being misrecognized and associating the estimated weights with the sections of the utterances; (3) using the weighted sections of the utterances to convert a speaker independent model to a speaker dependent model; and (4)

calculating the estimated weights comprises computing an average likelihood difference per frame and then computing a weight value by averaging the average likelihood difference over error words.

As discussed above in the §102 rejection, Goronzy does not disclose or suggest elements (1) - (3). Therefore, any combination of Goronzy with any other reference in rejecting claims 4-5, 12-13, 16-20, 22-28 and 30, is improper.

Furthermore, Junqua merely discloses the likelihood of observation given HMM model (Junqua, col. 5, lines 43-44), not an average likelihood difference per frame, or averaging the average likelihood difference over error words.

In addition, Junqua merely discloses a likelihood score ratio that compares the likelihood score associated with the mean or average of the likelihood scores associated with the incorrect recognition (Junqua, col. 4, lines 18-21). The likelihood ratio is the ratio between the likelihood score for correct recognition and the likelihood score for incorrect recognition (Junqua, col. 5, lines 26-30).. In contrast, claim 4 recites the average likelihood difference (not ratio) per frame.

Moreover, neither Goronzy nor Junqua discloses or suggests computing a weight value by averaging the average likelihood difference over error words.

When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to: (A) The claimed invention must be considered as a whole; (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and (D) Reasonable expectation of success is the standard with which obviousness is determined. Hodosh v. Block Drug Col, Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). "When determining the patentability of a claimed invention which combined two known elements, 'the question is whether there is something in the prior art as a whole suggest the desirability, and thus the obviousness, of making the combination.'" In re Beattie, Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462, 221 USPQ (BNA) 481, 488 (Fed. Cir. 1984). To defeat patentability based on obviousness, the suggestion to make the new product having the claimed characteristics must come from the prior art, not from the hindsight knowledge of the invention. Interconnect Planning Corp. v. Feil, 744 F.2d 1132, 1143, 227 USPQ (BNA) 543, 551 (Fed. Cir. 1985). To

prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the Examiner to show a motivation to combine the references that create the case of obviousness. In other words, the Examiner must show reasons that a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the prior elements from the cited prior references for combination in the manner claimed. In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1996), 47 USPQ 2d (BNA) 1453. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or implicitly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973. (Bd.Pat.App.&Inter. 1985). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Furthermore, although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." In re Mills 916 F.2d at 682, 16 USPQ2d at 1432; In re Fitch, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992).

Therefore, Applicants believe that independent claims 1, 8, 16, and 23, and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicants respectfully request the rejection under 35 U.S.C. §103(a) be withdrawn.

Allowable Subject Matter

Applicants note with appreciation the Examiner's indication of allowable subject matter. The Examiner objects to claims 6, 14, 21, and 29 as being dependent on a rejected base claim, but indicates that the claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, in light of the above amendments and remarks, Applicants respectfully request that independent claims 1, 8, 16, and 23, and all claims that depend therefrom be allowed.

Conclusion

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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